

CEOS SEC Report

(two pages max.)

Entity: CEO

Prepared By: Steven Hosford (ESA/CNES)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- **CEO/DCEO.** A teleconference took place on 30th Nov which brought together part of the CEO Search team. Unfortunately it was not attended by the team member from the incoming CEOS SIT Chair (GA/CSIRO) and the CEOS Chair (ISRO) who had been invited (probably the two most impacted by the lack of a CEO). A number of actions were taken by the current CEO including contacting/recontacting some potential candidates and writing and distributing the CEO job description to solicit interest in the position.
- **Freshwater from Space.** No further information since the last SEC meeting. A short meeting report is due by end 2018. The next steps are under definition with the workshop leads.
- **CEOS Work plan development.** Feedback is anticipated from all working groups before the Christmas break. Several VCs (AC-VC, OST-VC, OSVW-VC, OCR-VC) and themes (Blue Planet, Biodiversity, SDGs) have yet to respond with inputs. There has been some push back on providing an estimation of resources and details of contributing agencies from several contributors. A schedule for updating of the ceos-deliverables.org website needs is to be discussed with SEO, in the meantime this work plan will be developed based on the inputs provided in the Excel sheets.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

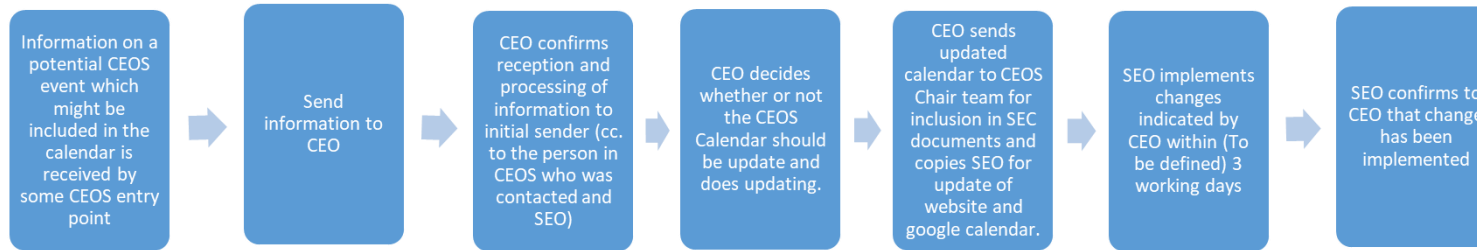
- **GEO-CEOS Bilateral** preparation is underway. A draft agenda will be distributed shortly.

Other highlights, activities, actions, projects, collaborations

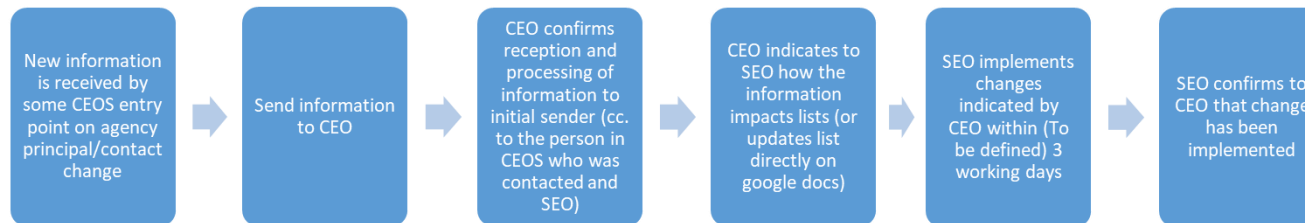
(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- For SEC information. 3 “process charts” have been developed which describe the process for updating CEOS listservs (email lists), information on representatives of CEOS members/associates and information on CEOS meetings. Please take note of these.

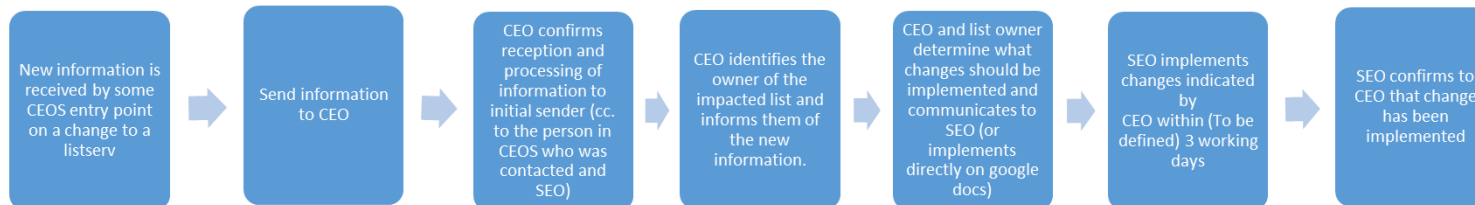
Procedure for update of CEOS calendar



Procedure for update of information on CEOS agency principal/contact change



Procedure for update of CEOS listservs



CEOS SEC-245 Report

Entity: SIT Chair Team

Prepared By: Kerry Sawyer (NOAA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- No update regarding the plan forward with SDG AHT as proposed during SEC-244. We will provide further information at SEC-246.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- Updates on any relevant CEOS 32nd Plenary, SIT Technical Workshop and SIT-33 actions:

CEOS-32-03	SIT Chair to lead the drafting of a CEOS letter to CNES suggesting the approach required for CEOS to consider information on the SCO, its scope, and relevance to existing activities.		December 2018
	CEOS (leadership) to send letter to CNES suggesting the approach required for CEOS to consider information on the SCO, its scope and relevance to existing activities – content would include a number of items (local adaptation scale issues – more socioeconomic).		
CEOS-32-07	SIT Chair and SIT Vice Chair to collaborate on an interim paper, as a communication tool for use by CEOS Agency and stakeholder representatives, that clearly articulates: 1) a succinct definition of ARD; 2) a brief summary of our ARD accomplishments to date; 3) a brief overview of existing plans for the next two years; and 4) the designated points of contact within CEOS.		November 2018 CLOSED
	CLOSED: Email sent on 11/29/18 with refined slide and note indicating this was initial framing; a common description for initial communication; and a starting point for more detailed or tailored use. Superseded SITTW-2018-05 action.		

SITTW-2018-04	SIT Chair	Propose WGISS participation in the GEO Expert Advisory Group	30 Sep 2018 CLOSED
	<i>Rationale: Because this EAG is tasked with providing guidance on how to implement a results-oriented GEOSS, it would be beneficial to have a WGISS representative participate in the EAG.</i>		
	CLOSED: Forwarded letter to GEO SEC on 11/28/18 nominating Rob Woodcock to participate in the EAG on behalf of CEOS.		

SIT-33-07	WGClimate	Serve as Point of Contact for CEOS and keep track of the Space Climate Observatory (SCO) progress. Report to CEOS SEC monthly telecons, and provide updates at SIT TW and CEOS Plenary.	Through to 2018 Plenary
	<i>Rationale: CNES has asked for CEOS engagement in SCO.</i>		
	<p>11/28/18 – SIT Chair wishes to propose that this action be closed at SEC-245 and that reporting on SCO become a permanent part of the WGClimate Chair responsibilities.</p> <p>Jörg provided an update to this action at SIT TW and Plenary; reported that the primary objective of SCO will be to produce and distribute relevant, timely and accurate information on the impacts of climate change at national and regional scales. Was announced during Plenary that CNES expects to add SCO as Community Activity to GEO Work Programme (was confirmed added at GEO-XV Plenary).</p> <p>CEOS Chair sent letter in June to Mr. Le Gall noting WGClimate Chair as CEOS be considered an observer to SCO, that Jörg will be our CEOS contact noting further discussion at CEOS Plenary in October.</p>		

243-01	SIT Chair to draft a response regarding the GEOGLAM and CBD letters, and to serve as the bridge between the 2018 and 2019 CEOS Chair to ensure completion of the action.	November 30
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- This action is closed. The letter to GEOGLAM was sent on 12/3/18 (SEC cc'ed) and the letter to CBD was sent on 12/4/18 (SEC not cc'ed because not on initial addressee list but can send to SEC if desired).
- Upcoming CEOS-GEO Bilateral in Geneva
 - Draft agenda shared with CEOS attendees and GEO Secretariat. Awaiting comments. Will share with SEC shortly. No assistance from SEC required at this time.
- VC Reports
 - Nothing to report at this time
- Updates on SIT-34
 - Location confirmed for hotel in Miami (likely Coconut Grove)
 - Tuesday, 2 April reserved for side meetings
 - Very strict rules and deadlines for side meetings – three rooms available only, likely no A/V support but wifi and polycom will be available
 - Wednesday, 3 April and Thursday, 4 April for main SIT-34
 - Proposing site visit on either PM 2 April or AM 5 April to NOAA's Atlantic Oceanographic and Meteorological Laboratory in Key Biscayne
 - Registration/Meeting fee required of ~\$105 for ALL participants

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- N/A

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- CEOS-GEO Bilateral Meeting in Geneva: 21 and 22 January 2019

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

- N/A

CEOS SEC Report

(two pages max.)

Entity: GEO SEC

Prepared By: Akiko Noda (GEO Secretariat)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Outcome of the 1st Expert Advisory Meeting was drafted shortly after the meeting but it is still waiting the approval from GEO Secretariat director.

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- NA

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- GEO XV
Please see the article written by the GEO Sec in the next CEOS NEWS
- Call for 2020-2022 GEO Work Programme Activities
The GEO Secretariat and the GEO Programme Board announced the call for a proposal for a new or an updated implementation plan for the 2020-2022 GEO Work Programme on 14 December. The detailed information is available at the following website, http://www.earthobservations.org/gwp2020_dev.php
The deadline for submission is 15 February.
- Call for GEO-Amazon Earth Observation Cloud Credits Programme
As the GEO Secretariat Director mentioned in his speech at the GEO Plenary, the GEO Secretariat successfully announced the call on 18 December after intensive consultation from ExCOM members. Agencies and research organizations of developing countries can apply to this programme. Recipients are allowed to access to up to \$100,000 of Amazon Web Services cloud credits over a 3-year period in order to process and analyse big Earth observation data for sustainable development. The more information is on the GEO Website, <http://www.earthobservations.org/aws.php>

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- CEOS-GEO Bilateral meeting 21-22 January, Geneva
- Programme Board Meeting, 7-8 February, Geneva
- 2nd Expert Advisory Group Meeting, 5-6 February, Geneva

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

CEOS SEC-245 Report – December 2018

Entity: SEO

Prepared By: Brian Killough (NASA)

Issues requiring discussion/decision during CEOS SEC teleconference

- None

Updates on issues raised during the last CEOS SEC teleconference

- **Action 244-03** requested the SEO share a suggested action for the CEOS Work Plan regarding the 2019 CEOS Chair initiative. The action below was submitted to Steven Hosford (CEO).

Number: DATA-XX

Title: Mekong Data Cube

Description: Develop and demonstrate a Mekong Data Cube supporting Vietnam, Laos, Cambodia and Thailand with stakeholder support from the Mekong River Commission (MRC). Datasets will include Landsat, Sentinel-1, Sentinel-2 and ALOS PALSAR Mosaics. Applications will focus on rice and forests. This project is a CEOS Chair initiative from VNESC/VAST.

Completion: 2019-Q4

Responsible CEOS Entities: CEOS Chair, SEO, SDCG for GFOI, GEOGLAM Ad Hoc Team

Person Responsible: Dr. Vu Anh Tuan

Link to GEO Work Program: GEOGLAM Flagship, GFOI Flagship

List of Contributing Agencies: VNESC/VAST, NASA, USGS, CNES, GA, CSIRO, JAXA, ESA, EC

Upcoming meetings or events

- The SEO (Brian Killough and Syed Rizvi) are attending the AGU Meeting in Washington, D.C. on Dec 10-14. The SEO is co-chairing several sessions focused on machine learning and satellite data.

Other highlights, activities, actions, projects, collaborations

(e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- The SEO completed several remote training sessions with the Africa Regional Data Cube (ARDC) countries. These were Nov 27-29 for Tanzania, a Kenya Open Data Webinar on Nov 30, and a Ghana feedback session on Dec 5. The ARDC countries have become increasingly active and are using CEOS satellite data to produce decision-making products. Each training has been followed by a feedback session to capture lessons learned and improve the training approach and the tools used to analyze the data.

CEOS SEC 245 Report

Entity: WGISS (Working Group on Information System and Services)

Prepared By: Mirko Albani - Chair (ESA), Rob Woodcock – Vice-chair (CSIRO)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- WGISS is preparing inputs for the CEOS 2019-21 Work Plan. WG Terms of Reference might be updated to reflect WGISS mandate in the frame of Future Data Architectures.
- A “CEOS Agencies Participation/Contribution to WGISS” table (showing the different WGISS groups, their scope, CEOS agencies interest/benefits, and skills of representatives) will be finalised, distributed and posted to advertise and stimulate participation to the WGISS meetings.
- *Collaborations with:*
 - **COVERAGE Initiative** to make some key thematic datasets discoverable and accessible through the WGISS Connected Data Assets. Procedure based on utilisation of FedEO and registration in IDN sent to the COVERAGE team for further delivery to relevant data holders. Close follow-up of the activity in coordination with COVERAGE team in order to work towards getting granule search access to all identified datasets.
 - **WGCv** on four identified topics. Activities ongoing. Next joint teleconference scheduled in January 2019.
 - **Carbon Team** on prototype carbon portal development. New version issued for review by Carbon Team and next teleconference scheduled on 18 December. After confirmation from Carbon Team, the portal will be open-up to a wider user community to gather additional feedback. Governance after final release to be defined. Carbon Portal development team looking into the possibility to support a case study on forest monitoring in the Mekong area.
 - **WGClimate** on ECV inventory Version 2.0 datasets registration in IDN as first step for accessibility through WGISS Connected Data Assets Infrastructure. Registration of an initial set of data progressing in coordination with WGClimate chair using the FedEO dedicated “fast registration” procedure also used in the frame of the COVERAGE/WGISS activity. Second batch of data will be registered in coordination with WGClimate during ECV Inventory update to V3.
 - **WGCapD** for technology and user oriented webinars. WGISS support for FDA demonstration during SAR training/meeting in Vietnam being discussed with WGCapD. The Inventory of Open Source Software produced by WGISS will be shared with WGCapD as input for the identification of additional training opportunities.
 - **WGDisasters:** generic recovery observatory, Future Data Architectures and Connected Data Assets identified as possible cooperation areas to be further explored.
 - **Virtual Constellations** to update the inventory of Virtual Constellations datasets and ensure discoverability/accessibility through WGISS Connected Data Assets infrastructure. Inventory update to be started.
 - **GEO:** potential WGISS additional contribution to GEO/GEOSS in the frame of FDA and technologies are being considered and discussed.
 - **WMO** (World Meteorological Organization): collaboration with the WMO International Expert Group on Climate Data Modernisation (IEG-CDM) under consideration.

- *Data Preservation and Stewardship*
 - White Paper on “Data Stewardship Reference Model and Measuring Earth Observation Data Usage Best Practice” will be finalised by the end of the year with additional input received during WGISS-46 meeting.
 - Proposal for GEO Data Management Principles Implementation Guidelines (DMP IG) improvement/update on the basis of CEOS WGISS Maturity Matrix being drafted.
 - Definition of stewardship process use cases to be included in a CCSDS Green Book will start in collaboration with WMO.
- *Data Discovery and Access (WGISS Connected Data Assets Activities)*
 - Implementation of a front-end/portal within the IDN for CEOS data discovery and access is being discussed.
 - National Remote Sensing Center of China (NRSCC) has confirmed possibility of metadata harvesting between WGISS Connected Data Assets (CDA) and ChinaGEOSS platform on a periodical basis. Tests with CWIC are starting.
 - NOAA datasets being registered/updated in the International Directory Network (IDN) and granule search/access is being implemented.
 - A simplified procedure to allow collections/granules discovery and access through FedEO and automatic registration in IDN is being used to increase number of partners and collections and in different cooperation activities.
 - All FedEO data collections are being registered in the IDN; granule access to FedEO datasets registered in the IDN will be provided through FedEO.
 - Activities started with JAXA for discovery/access through WGISS CDA and automatic registration in IDN; activities progressing with DLR and EUMETSAT and to be resumed with ROSCOSMOS.
 - Granule search and access to Essential Climate Variables (ECV) and COVERAGE data collections is being implemented.
 - Implementation of data usage metrics in WGISS CDA will be considered based on the Best Practice under definition.
 - GEOSS Platform team will add CEOS IDN in the catalogues visible and accessible through the GEOSS Platform. This will increase visibility of CEOS contribution to GEO/GEOSS.
 - The CEOS OpenSearch Conformance Test document has been finalised and issued; WGISS Connected Data Assets Client Partner document to describe process to access WGISS CDA from client portals being finalised by System Level Team (SLT).
- *Interoperability and Use*
 - Future Data Architectures:
 - FDA actions assigned to WGISS in the CEOS 2018-2020 Work-plan are being actively discussed and addressed by WGISS members with substantial progress.
 - Open source Software and tools inventory lists now more than 90 items; DB implementation solution is under analysis in coordination with SEO. Updated DB requirements collected during the WGISS#46 meeting.
 - First version of FDA inventory table produced and distributed for review.
- *Technology Exploration:*
 - Next webinar will focus on “Tools and Data Interoperability Demonstrations” and will be organised in cooperation with WGCapD. It might consist in a dedicated session or workshop during WGISS-47 meeting.
 - A Cloud services session might be included during WGISS-47 meeting.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- 2019 Conference on Big Data from Space (BiDS'19): 19-21 February 2019, Alte Kongresshalle, Munich, Germany.
- WGISS-47 – April 29 to May 02, Silver Spring, Maryland (MD), USA.
- ESA 2019 Living Planet Symposium, Milan, 13-17 May 2019: focus on how Earth Observation contributes to science and society, and how disruptive technologies and actors are changing the traditional Earth Observation landscape, which is also creating new opportunities for public and private sector interactions.

CEOS SEC-245 Report
(two pages max.)

Entity: WGCapD

Prepared By: Prakash Chauhan (Chair/ISRO) and Nancy Searby (Vice Chair/NASA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- WGCapD has worked with the SDG AHT to schedule the planned SDG awareness webinar on December 17, 2018 to be held two times during the day to reach both hemispheres.
- WGCapD team has been working with VNESC and WGISS to identify SAR training plans to meet needs for basic SAR training and applications in agriculture, carbon monitoring, and disaster monitoring and risk reduction. The first training in basic SAR remote sensing and applications in agriculture and carbon monitoring is planned right after the SARCube training, and the dates for the 2nd workshop are still being defined.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- WGCapD-8 will be held In Dehradun, India from March 6– 9, 2019.

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

CEOS SEC 245 Report

(two pages max.)

Entity: WGDisasters

Prepared By: Simona Zoffoli (Italian Space Agency), David Green (NASA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- Workplan 2019-2021
 - WG has made a revision of the main initiatives and an updated list of deliverables was provided to CEOS CEO. Process is on going to update the workplan document.
- Geohazard Supersites and Natural Laboratories (GSNL)
 - Continuous provision of data by Space Agencies to the established Supersites
 - Biennial reports from Hawaii and Enceladus Supersites received for review
 - Renewal Letters drafted for four Geohazard Supersites (Iceland, Vesuvius, Etna and Marmara), reviewed at the last WG Disasters meeting.
- GEODARMA
 - 1st GEO pilot project (for flooding in Myanmar) approved and arrangements finalised for data access; regional assessment work is proceeding in Latin America and the Caribbean and should be completed in early 2019. The second series of pilots for Asia are also advancing and may be ready to move forward in early 2019.
- Seismic hazard demonstrator
 - On-going activities on active fault mapping and on capacity building in coordination with GSNL. The team started ordering data to Space Agencies involved in the project. An updated description for the CEOS web page has been provided.
- Geohazards Lab
 - On-going promoting hosted processing and raising awareness (capacity building, training courses, workshops) and the integration of services and tools to better meet community needs
- Volcano demonstrator
 - On-going activities to define a detailed implementation plan with regional leaders and tasks. Consolidation of the data plan and start ordering data to Space Agencies involved in the project
- Recovery Observatory (RO)
 - RO team has held a first round of discussions with key international stakeholders (EU, World Bank, UNDP, UNEP) to extend RO experience on a generic basis after major events. A face-to-face meeting took place on December 5-6 to take stock of how satellite data is currently used to support Recovery, and how this can be improved.
- Landslide Pilot
 - ongoing research in the study sites to develop new methodologies for processing SAR and optical data

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- CEOS WG Disasters meeting n.11, Harokopeion University, Athens, Greece, March,5-7, 2019
- CEOS WG Disasters meeting n.12, University of Iceland /Nordic Volcanological center, Iceland, September,23-27, 2019

CEOS SEC Report

(two pages max.)

Entity: WGCV

Prepared By: Cindy Ong (CSIRO) & Akhiko Kuze (JAXA)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- None

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- None

Other highlights, activities, actions, projects, collaborations

(Dot points, e.g. outputs, new products, papers, technical reports, media, pipeline and new projects, interactions, project status changes, new opportunities)

- A teleconference was held with WGCV sub-group leaders and CEOS work plan leads to obtain a consolidated update on the CEOS work plan, and, to inform the leaders on the CEOS GHG activity and to seek comments and contributions towards it;
- The WGCV SAR subgroup held a 3 day workshop hosted by the Comision Nacional de Actividades Espaciales (CONAE, National Commission on Space Activities) in Buenos Aires, Argentina. There were 38 talks on calibration and validation, and, up to 50 in the audience during most of the meeting. The topics of the 7 sessions were: Calibration of future SAR missions, Calibration methodologies and techniques, SAR Cal/Val targets and sites, SAR Cal/Val Related topics, Calibration of Running SAR missions, SAR data quality analysis, and Analysis Ready Data products for SAR. There was also extended discussions on
 - updating the SAR Cal/Val target database;
 - evaluation of CARD4L SAR product family specifications;
 - joint investment in SAR Cal/Val supersites or virtual supersites; and,
 - the CEOS 2018-2020 workplan and SAR SG's contribution to it;
- The Atmospheric Composition Sub-Group Expert Meeting preparations is ongoing, including preparing the list of key participants, the possible dates & venue, the tentative agenda, etc. The formal invitations will go out soon. This work contributes to CV-18.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- IVOS Subgroup will hold a meeting at CSIRO in Perth, Australia March 25-29, 2019 including a tour of the proposed RadCalNet site north of Perth.
- Pre-flight calibration workshop is being scheduled for mid June 2019
- WGCV Plenary will be held in the week of 15th July 2019 in Perth, Western Australia
- SECOND ACIX2/CMIX WORKSHOP TO BE HELD AT ESRIN (EVALUATION OF THE COMPARISON RESULTS) IN THE TIME FRAME OF JUNE TO SEPTEMBER 2019.

CEOS SEC Report

(two pages max.)

Entity: WGClimate

Prepared By: Jörg Schulz (EUMETSAT)

Updates on issues raised during the last CEOS SEC teleconference

(Dot points)

- Point 1
- Point 2

Issues requiring discussion/decision during current CEOS SEC teleconference

(Dot points)

- Could not finish discussions with VCs on implementation of actions from the Coordinated Action Plan. This may have some consequences on completeness of the CEOS Workplan 2019-2021. Question: What would be the last window to add or change an action prior publication.
- Point 2

Other highlights, activities, actions, projects, collaborations

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- ECV Inventory update is rolling since 23 November and first updates are in. Were contacted by new responders that had heard about the Inventory and want to contribute. Seems that it is becoming attractive to have data sets in it.
- Submitted all required documents to UNFCCC for SBSTA-49 on time:
 - CEOS/CGMS statement as endorsed at CEOS Plenary
 - A report on space agencies support to the implementation of the Paris Agreement based on the statement, GHG white paper and earlier gap analysis report based on the ECV Inventory;
 - Provided input to the SBSTA chair background document for delegations.
- Participated in COP-24/SBSTA-49 opening meetings and instead of reading the statement provided a 10 min talk to the delegations;
- SBSTA-49 ended without an agreed Conclusion. Saudi Arabia and Kuwait could not agree with the other countries on statements regarding concerns on climate change as outlined in the WMO report on global climate and on the IPCC 1.5° degree report.
- Nevertheless SBSTA-49 will (at least for the next COP) reintroduce a Earth Observation day (which will actually be only a half day). This provides opportunity to explain to delegations what we are doing in particular for GHG monitoring.

Upcoming meetings or events

(Dot points, e.g. meetings, conferences of relevance, visits)

- WGClimate #10, Marrakech, Morocco jointly with GCOS panels and WCRP/Data Advisory Council
- WGClimate #11, tentatively pencilled in for Hawaii in September prior to the SIT TW. But this is TBC with WGClimate members.

Attachments

(e.g. pictures, figures, graphs, links – for use in overall CEOS reporting and as website resources etc.)

2019 CEOS Chair Initiative summary

1. Define of the Area

- The “Mekong region”, as discussed and agreed, should covers four countries: Vietnam, Laos, Cambodia and Thailand (not including Myanmar). We wonder that there is no chance to have a field trip to Myanmar
- The shape file of the interest area (Mekong region) has been sent by Dr. Lam Dao Nguyen

2. The data

- VNSC has been supported for Landsat data for Vietnam (by USGS), but not other countries
- VNSC has been supported for Sentinel 1 data for Vietnam (by CNES), but not other countries

So, we need data:

- Landsat: for 4 countries (3 remaining)
- Sentinel 1: for 4 countries (3 remaining)
- Sentinel 2: for 4 countries (4 remaining)
- ALOS 2: for 4 countries

Data ingestion:

We still have problem with ingestion of Landsat new format. As reported from Ms. Linh who is taking care for data ingestion and since help from CSIRO team in the meeting at 1st week of December, the solution found. However, Ms. Linh still working on that and the data is not ingested all.

Sentinel 1 and 2 and also ALOS -2: should not have any problem.

3. Algorithm

Rice monitoring: VNSC developed algorithm (by Dr. Lam Dao Nguyen). It needs to be validated for other area rather than Mekong delta in Vietnam

Forest monitoring: VNSC has been supported by CESBIO/CNES for the algorithm (SAR based). VNSC is developing another algorithm (Optical and SAR based). These algorithms also need to be validated.

Validation need to be based on the field data. In Vietnam, the validation data and field data can be supported by VNSC and FIPI (Forest Inventory and Planning Institute). For the remain countries, VNSC will contact MRC to find the chance to work with authority agencies of each country.

4. Training/capacity building

- Should be (capacity building) train for trainers
- Topic: rice monitoring and forest monitoring
(Detail by Mr. Huy?)

5. Data Platform support

VNSC has some challenges in:

- Data ingestion:
- Sharing the Jupiter Notebook for end-user

However, at the visiting of Mat Paige, there are some solution mentioned. Ms. Linh will check with that soon

Product	Process / Algorithm	Running on VNDC?	Data in VNDC and ongoing data flow?				Country POC				Validation and Support Data				Ground Data				
			Vietnam	Cambodia	Laos	Thailand	Vietnam	Cambodia	Laos	Thailand	Vietnam	Cambodia	Laos	Thailand	Vietnam	Cambodia	Laos	Thailand	
Rice Maps, Rice Phenology / Growth Stage, Rice Crop Production/Yield Estimation	Being developed by Lam Dao Nguyen	No	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD	Lam Dao Nguyen					GEORice Comparison Products	ALOS-2 estimation validation via SAFE project.	GEORice Comparison Products	Leverage activities in Thailand with GISTDA and MOAC/OAE for ALOS-2 estimation validation	VNSC Ground Data Collection			
			S-2 ARD (via CESBIO)	S-2 ARD	S-2 ARD	S-2 ARD		INAHOR Rice / Non Rice Maps	GEORice Comparison Products	INAHOR Rice / Non Rice Maps	GEORice Comparison Products	GEORice Ground Data Collection							
			ALOS-2 (via JAXA)	ALOS-2	ALOS-2	ALOS-2													
			RS-2?	RS-2?	RS-2?	RS-2?			INAHOR Rice / Non Rice Maps		INAHOR Rice / Non Rice Maps								
			LS 7/8	LS 7/8	LS 7/8	LS 7/8													
S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)																
Optical & C/L/X-band Comparisons for Rice Monitoring	TBD by JAXA and VNSC?	No	S-1 ARD (via CESBIO)													VNSC Ground Data Collection			
			ALOS-2 fine mode data (via JAXA)													GEORice Ground Data Collection			
			TBD X-band?																
			LS 7/8																
			S-2 ARD (via CESBIO)																
Forest Map	S-1 S-2 LS 7/8 Being developed by VNSC and FIPI	No	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	Vu Anh Tuan								VNSC ground data				
			S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)	S-2 ARD (via CESBIO)		FIPI forest map				FIPI ground data							
			LS 7/8 ARD (via USGS)	LS 7/8 ARD (via USGS)	LS 7/8 ARD (via USGS)	LS 7/8 ARD (via USGS)													
Forest monitoring	S-1 CESBIO Algorithm	Yes	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	S-1 ARD (via CESBIO)	Vu Anh Tuan					FIPI forest map			VNSC ground data				
								FIPI forest change map			FIPI ground data								
Forest monitoring	Modified (?)	Yes (?)	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)	Vu Anh Tuan					FIPI forest map			VNSC ground data				

Forest monitoring	ALOS CESBIO Algorithm																
	Modified (?) JAXA ALOS- 2 Forest Algorithm									FIPI forest change map					FIPI ground data		
		No	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)	ALOS-2 (via JAXA)											

1. The table

2. The website:

Title: Forest map

Description: Forests play an important role in tropical countries of the Mekong region. There are forest maps in each country, but there are not common map legend (classification system). The forest maps in each country are updated in different phases. Therefore, joint management efforts related to forest information are challenge. Simplified mapping of forest from satellite imagery for the purposes of forest monitoring in the Mekong River region, as well as towards the requirements of the RED ++ program.

Objectives:

Contributors:

ESA (Sentinel data)

USGS: Landsat data

CESBIO/CNES (data processing and algorithms)

End users: MRC, Vietnam Ministry of Agriculture and Rural Development

Data used: Sentinel-1, Sentinel-2, Landsat 7, Landsat 8

Algorithms used:

Title: Forest monitoring

Description: Rapid forest shifts/changes are occurring in the Mekong region. The forest change, including deforestation and reforestation is consequence of parallel processes: forest fire; economic development activities such as timber extraction, the expansion of agricultural land, coffee and rubber plantation; natural regeneration from abandoned areas; government forestation efforts. Regular forest monitoring from satellite data helps to identify forest deforestation hotspots in order to concentrate efforts of forest preventing as well as to provide timely information for forest management.

Objectives:

Contributors:

ESA (Sentinel data)

JAXA: ALOS data

CESBIO/CNES (data processing and algorithms)

End users: MRC, Vietnam Ministry of Agriculture and Rural Development

Data used: Sentinel-1, Sentinel-2, ALOS-2

Algorithms used: